



## A LETTER FROM THE EDITOR

Fourteen years ago, while investigating plant medicine in the Peruvian Amazon, I asked Don Fidel Mosombite—a *curandero* who uses plants for healing—how people first learned the recipe for *ayahuasca*, the hallucinogenic brew used for diagnosis, healing, and spiritual balance among many Amazonian tribes. Even more than with many plant medicines, human knowledge of the drug is remarkable because it requires at least two plants, *Banisteriopsis caapi* and *Psychotria viridis*, which often grow in different conditions far from each other, and only together create the profound effect that neither can attain alone. With 80,000 or more species in the South American rainforest, trial and error seems unlikely. Don Fidel, a native of the Rio Huallaga basin, told me that when the Incas were the rulers of the Andes, some 600 years ago, a great white bird with huge wings flew down from their kingdom in the mountaintops, sailing over the vast jungle, telling the people that great

changes were coming. The bird showed the forest people the two plants that they should collect and brew together. The bird said that strange and powerful men would come, and great suffering would ensue, but that if the forest people would make this brew and drink it, they would not forget who they were, they would not be forsaken by the plant spirits. They would survive. Very soon after that, said Don Fidel, the Incas fell to the Spanish conquistadors, soldiers and devastating disease flowed down the rivers, colonial bureaucracy and Christianity marched in, the rape of the Amazon began (see our book review on quinine), the rubber boom brought another wave of atrocities, followed by revolutions, drug wars, and "debt." Throughout these centuries of coming to terms with civilization, the *ayahuasca* gift—used across tropical South America—has brought wisdom to tribal elders, visions of where to move for food or safety, advice on other healing plants, physi-

cal cures, emotional clarity, spiritual strength. The native, and in many cases mestizo, people of the Amazon have not forgotten who they are. Today, displaced *indigenas* of various language groups gather to take the visionary brew together, and the practice is growing. There are other myths of its origin, but the deep awareness of self and environment is universal.

In this issue of *PlantWise*, we explore the notion of conservation of nature and culture by indigenous peoples. The *ayahuasca* story is offered as an introduction to that way of thinking. Thank you for joining our readership, please support Botanical Dimensions, and may we all be wise in the way of the plants.

Sincerely,

Kathleen Harrison McKenna  
President, Botanical Dimensions

## INDIGENOUS CONSERVATION EFFORTS

In recent years, Americans and Europeans have become accustomed to the notion of orchestrating and financing conservation efforts in various third-world countries, as well as our own. Like foreign aid given after war by the victor to the defeated country, the descendants of European colonizers are feeling the need to rescue nature where they once plundered it. The motives are mixed—environmental, economic, karmic—but the effect is good, and certainly the sooner done the better, as we are already too late for many species and delicate ecosystems.

A newer development is that of indigenous peoples taking an active part in the conservation of their treasures, whether

they be endangered plants, animals, archaeological sites, or cultural traditions. Ultimately, survival of these environments depends on the well-being and cooperation of the human inhabitants, whose own survival is of course their highest priority. With still-burgeoning populations, respect for nature often seems impossible, but many are beginning to see that their own fates are intimately connected to the well-being of their place, and have moved into action to defend, or to help with the international defense.

### Central American Cooperation

In Central America, despite all the recent political chaos, representatives of the countries of Mexico, Belize, Guatemala,

Honduras and El Salvador have agreed to acknowledge and protect their mutual Mayan heritage with the formation of huge nature conservation areas, protected archaeological sites, and minimally disruptive routes for access. Costa Rica is admired for its extensive rainforest preserves and innovative measures. There are citizens-groups that protect rare birds, or a certain canyon, or propagate a species of tree or reptile so that harvesting need not decimate the wild population.

### Brazilians Wanting Nature

In the Brazilian Amazon, deep-forest Indians take their canoes far downriver, into towns they've never seen before, traveling to cities to speak to legislators,

(continued next page)



asking to be left alone. *We know you have many things, they say, but we do not want them. We want our forest and our way of life, as it is, without your destruction or your religion or your unhappiness.* It is a very sophisticated person who can make that journey between worlds, understand, communicate, and return home.

Recently, "extraction forestry" has come to international attention due largely to the efforts of rubber gatherers and harvesters of the nuts and fruits of the Amazon's trees. First by example and then through activism, Chico Mendes and others have shown that the forest is more profitable protected than destroyed.

#### West African Revival

In Ghana, and elsewhere along the West African coast, the use of herbal medicines and traditional healers is growing, some say providing up to 75% of primary health care. The Center for Scientific Research into Plant Medicine is funded by Ghana's government and staffed by local doctors also trained as herbalists, with the goal of analyzing the thousands of traditionally-used medicinal plants in search of their active properties. Such centers are springing up in a number of African and Asian countries.

#### Hopeful Peruvian Projects

At Botanical Dimensions, we support the efforts of two Peruvian cousins, each of whom has initiated a small-scale but enthusiastic project designed to preserve and

improve their pressured environment:

The USKO-AYAR Amazonian School of Painting (in Quechua, *usko* means spiritual, *ayar* means prince) was created by private interests, without official help. The school provides the youth of Pucallpa, a poor river town in the Peruvian Amazon, with the opportunity of free art instruction and materials while teaching them to document the local flora, fauna and ways of life. Students go by boat with their teacher, painter Pablo Amaringo, to draw from nature. Pablo is a talented artist and former *vegetalista* (a healer who has derived his knowledge from plant-teachers), who has Lamista, Cocama and Piro Indian ancestry. Those students who have lost their connection to the wild learn the plants, while gaining respect for the forest through the act of paying attention. Currently one hundred students of all ages are producing realistic gouache paintings of everything from insect nests to river sunsets, and showing them in exhibits in Peru and even Europe. The school was born out of a collaboration between Pablo Amaringo and Colombian-Finnish anthropologist Luis Eduardo Luna (a director of Botanical Dimensions). Dr. Luna has been able to sell some of Sr. Amaringo's paintings, as well as those of his students, and thereby help support the school.

Pablo's cousin, Francisco Montes Shuna, met Terence and Dennis McKenna when they were plant-collecting in Tarapoto in 1981. He began gathering plants and

seeds for our Hawaiian garden, and has shipped us about 70 species over the years. In 1987 he began his own ethnobotanical garden called El Chullachaqui, near Lago Yarinacocha, not far from Pucallpa. This site acts as a waystation for plants he collects from his deep-forest contacts, mostly Campo Indians. Because of the increasing disruption from military, *cocainero* and guerilla activity on the waterways, his hope is to move the plants to a garden site at Nueva Esperanza (new hope), west of Pucallpa. In the past year, Francisco has gotten much better at documenting the plants with habitat and folk-use data, a crucial part of the collecting process that is all too often overlooked. (For more information on the paintings, or how to send donations to the art school or the garden, contact Luis Eduardo Luna, Ph.D., Swedish School of Economics, Arkadiankatu 22, 00100 Helsinki 10, Finland.)

These are examples of grass-roots efforts that are springing up throughout endangered tropical ecosystems, where programs of conservation and development are initiated or led by local people, within their own culturally validated boundaries. The momentum of destruction and disruption is still so great that we—the Earth and her many species—are all in great peril, but it seems at least the dawn may be breaking among the human beings.



## WHAT IS BOTANICAL DIMENSIONS ?

Botanical Dimensions is a non-profit 501(c)3 organization, founded in 1985, dedicated to collecting living plants and surviving plant lore from cultures practicing folk medicine in the tropics worldwide. Ethnobotany is the study of plants used by people: for food, fiber, building and medicine. Ethnomedical plants are those used to prevent and cure illness, to maintain well-being of the body, mind and spirit. Because the medicinal plants are endangered, we support live plant and seed collection efforts in Central and South America, Africa and Asia. We maintain an extensive botanical garden in Hawaii, propagating the living collection for research and genetic diversity. In California, we coordinate educational outreach, keep a plant database, fundraise, and publish this newsletter, PlantWise.



*The shamanic tradition of plant medicine is as fragile as the rainforest itself.*



### THE HUMAN DIMENSION

Botanical Dimensions was founded by Kathleen Harrison McKenna, president, and Terence McKenna, secretary. We are joined on our board by many fine individuals who share our deep interest in plants and the quality of human life.

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# TALKING LEAVES

## Book Review

The name of our book review column comes to us from the Cherokee tribe of the 19th century. When introduced to the alphabet and printed books of the Europeans, they were particularly fascinated with what they called "talking leaves."

An "illiterate" Cherokee named Sequoyah created a syllabic alphabet for their unrecorded language, and began publishing an English-Cherokee newsletter (without a Mac!), which the tribe promptly learned to read. In the Amazon, we also hear reference to the "talking leaves" of the plants which teach and heal.

### *Seeds of Change: Five Plants That Transformed Mankind*

by Henry Hobhouse

(1985) Harper & Row, New York. 252 pp. \$8.95 in paper. 5 maps, 5 illus.

English farmer and journalist Hobhouse explores the impact on human history of five plants that have changed and motivated its course:

- Quinine**, the extract of a South American tree that made the European colonization of the warm tropics possible by providing a remedy against malaria.

- Sugar**, the drug that brought new life to slavery, a practice discredited in the West since the fall of Rome.

- Tea**, a stimulant whose profits were later used to finance a war in which England fought for the right to sell opium in China.

- Cotton**, a plant whose labor-intensive cultivation needs nearly shattered the American Federal Union.

- Potatoes**, the Andean root crop whose failure in Ireland brought millions of Irish to the New World.

Well-researched, succinct, and witty, Hobhouse reminds us that plants, as commodities, and as sources of drugs and food, have again and again changed the fates of peoples and nations in unexpected and far-reaching ways.

On Quinine: Hobhouse points out that quinine, an extract of the bark of the Andean *Cinchona* tree (called *quinquina*, or "bark of barks" by the South Americans) provides a natural antidote to malaria, one of the diseases introduced by Europeans to the New World. Spanish colonists in the early 1600's discovered its use as a febrifuge among the natives of Peru, although it took 250 years to figure out how it worked. It is estimated that about 8% of the current world's population suffers as survivors of malaria, and that the



survival of millions of people has been due to the availability of quinine.

"Until 1780, the only effective bark exported from South America was shipped from the Peruvian...area of Loxa and was of one variety only, *Cinchona officinalis*. Peruvian bark was expensive. It was "hunted," not farmed, and the trees were being [unnecessarily] destroyed in the process. Yet the Jesuits are said to have insisted that, as a religious duty, for every tree felled another should be planted. [The Jesuits then controlled the thriving world market, giving quinine the name "Jesuit's bark," for which reason the arch-Protestant Oliver Cromwell would not take it to combat his lingering malaria, and consequently died.] .....By 1795 the German naturalist Humboldt noted that 25,000 trees a year were being killed in the region of Loxa along. This destruction of natural wealth was as serious in proportion

as the destruction of the whale today, and Humboldt was as worried as any modern ecologist."

By 1850 the British enterprise in India was crippled by malaria and the cost of importing thousands of tons of powdered *Cinchona* bark annually to keep its army, bureaucracy, and support class going. Populations near tropical and temperate wetlands throughout the world were suffering from the most pervasive disease in history. "After gold and silver, the most valuable commodity by weight was *quinquina* bark." At last the British in India and the Dutch in Indonesia sent botanists to Peru to collect saplings, brought them to their colonial gardens, and began plantation growing and careful harvesting of the plant on which their power had come to depend. It was at this time that Kew Gardens in London, now the world's most renowned botanical garden, really got underway, with the impetus to bring all species of *Cinchona* to their greenhouses to propagate. A folding terrarium was designed to help young plants survive the months'-long voyages, and this invention, made of wood and glass, "played a key part in the collection efforts of Kew, in the commercial transfer of plants, and in the dissemination of species all over the world throughout the nineteenth century."

Hobhouse makes the point that we still know so little about the effective chemistry of most rainforest plants, "yet the Amazon basin is being systematically destroyed, ironically a fate first made possible by the availability of quinine. Are there many other plants containing cures for the ills of civilization? Should we not find out before we destroy their environment forever?"





## FROM THE FIELD

by Bret Blosser

*Ethnologist Bret Blosser learns and teaches much of each year in Mexico, Guatemala and Belize. This account is excerpted from one of his letters.*

September, 1988

This summer I was able to go to the Sierra Mazateca during mushroom season. Overland by car, train and bus in about six days. My pals there made me one of the family and enthusiastically introduced me to their art, by that I mean their healing art. I see now that learning as a student is an invention. The normal learning is growing up in the intertidal zone of a mushroom moon. Dozing off on the big bed with ma, having chewed a few pajaritos ["little birds," or hallucinogenic mushrooms, *Psilocybe mexicana*] into sleep laced with grandpa's rocking high-country gospel music. Being with the patients and their families as they join the curandero's family for an afternoon and then a night. Staying up late and singing with the adults.

The singing I now see is praying or requesting or describing what is needed. It is to be fairly continuous, ideally, during the sets which the healer leads. This seems to keep the sessions very focused. I imagine that it builds a strong image of the desired healing and somehow directs the flow of renewal. Between sets no one is "oh-wow-man." There is quiet talk and matter-of-fact presence. The healer and patient seem to be discussing the cause and cure.

The *curandero* [healer] is about fifty years old, monolingual [Mazatecan], soft-spoken, solid. I refer to him here as R. He is a central and respected member of the local community. He and his grown sons are primarily corn, bean, and coffee farmers. The elder son is also the local medic, with three months of training in Oaxaca City and monthly continuing education at the hospital. He refers patients who need more advanced attention to the hospital or to his father, depending on the nature of the disease...Both sons have lived outside of the Sierra and are "cosmopolitan Mazatecs." Both are married, with children, and seem dedicated to learning mushroom healing, in which their wives are also involved.

These people befriended me in 1985 when I was hiking alone in the high Tenango backcountry looking for vertical cave leads. (The Sierra Mazateca contains world-class vertical cave systems.) R agreed

## WILD AND FREE

Gary Snyder, Pulitzer Prize-winning poet and writer, muses on the true meaning of wild/wildness/wilderness in the September 1989 issue of *Sierra Magazine*. Here are a few of his footprints to ponder.

....The pathless world of wild nature is a surpassing school, and those who have lived through her can be tough and funny teachers. Out here one is in constant engagement with countless plants and animals. To be well-educated is to have learned the songs, proverbs, stories, sayings, myths (and technologies) that come with this experiencing of the nonhuman members of the local ecological community. Practice in the field, "open country," is foremost. Walking is the great adventure, the first meditation, a practice of heartiness and soul primary to humankind. Walking is the exact balance of spirit and humility. Out walking, one notices where there is food. And there are true firsthand stories of....interdependence, interconnection, "ecology," on the level where it counts, also a teaching of mindfulness and preparedness. There is an extraordinary teaching of specific plants and animals and their uses, empirical and impeccable, that never reduces them to objects and commodities....

....Wilderness may temporarily dwindle, but wildness won't go away. A ghost wilderness hovers around the entire planet, the millions of tiny seeds of the original vegetation are hiding in the mud on the foot of an arctic tern, in the dry desert sands, or in the wind. These seeds are each uniquely adapted to a specific soil or circumstance; each has its own little form and fluff, ready to float, freeze, or be swallowed, always preserving the germ. Wilderness will inevitably return, but it will not be as fine a world as the one that was glistening in the early morning of the Holocene. Much life will be lost in the wake of human agency on Earth, that of the 20th and 21st centuries. Much is already lost....Where do we start to resolve the dichotomy of the civilized and the wild?....



to introduce me to his methods of healing involving psychoactive plants. He uses *Piziete* or *San Pedro*, a tall, pink or white blossoming tobacco, grown near the house; *Hojas de la Pastora* ["leaves of the Shepherdess," *Salvia divinorum*] grown away from trails in remote coffee plantations; and three species of wild mushrooms [tentatively *Psilocybe mexicana*; *Psilocybe caerulea*, *derrumbes* or landslide mushrooms; and *Stropharia/Psilocybe cubensis*, called *San Isidro*].

I stayed for ten days this visit and participated in three ceremonies. Two were specifically for me and one was for a patient. The two for me centered on introducing me to the format and technique of mushroom healing. I learned about using these plants and about singing/praying. R gives everyone an amount of mushrooms to eat, quite a bit to the patient. We sit and wait; men, women and children. There is a

tiny crucifix on the wall. A candlestub on the crossbeam behind it. No flowers. *San Pedro* herb on the altar. Copal smokes in a potshard on coals on the floor while R starts chanting. The lights are snapped off. R begins with "En el nombre, en el Padre, en el Hijo, en el Espiritu Santo," then he chant-sings. Everyone starts chanting-singing-talking at their own paces, some in musical relation to R. One in particular is complementing his lines with echoing higher notes and phrases, particularly on a closing refrain which might be something-something-tzo. There is a psychedelic ranger in the shy, portly *abuelita* [grandmother]. R leads the pack, belting out strong songs which become more intricate and interwoven as the night progresses.

It seems the sessions serve the purpose of requesting direct aid from God, etc., for life situations and of asking for general well-being and of discussing life situations. Later I ask if a lot of the healing goes on in discussions with the patient during the pauses. Yes... R's sons explain his role: "He is like a guide. It is like he is leading us up a mountain. He gets up to a certain point and he waits for us there. We have to reach. Then he leads on to the next point."





# UPHILL DOWNHILL

by  
Kat McKenna

With the debut of **PlantWise** in September, we found ourselves riding a publishing wave. We have received a number of encouraging responses to the newsletter, and to date (December 1) about 100 subscriptions, which we hope will increase. If you are reading this column, please take it upon yourself to tell someone about BD and show them this newsletter. Or send us a list of people you think would be interested, and we will send them a sample issue.

The same week brought to light Issue #64 of the **Whole Earth Review**, on the topic of Plants as Teachers. The issue was co-edited by Terence McKenna and Howard Rheingold, with contributions by Dennis McKenna, Luis Luna, Andrew Weil, Rob Montgomery, myself and others. Howard's article featured our work at the Hawaiian site on the Big Island. The entire issue is a document of modern ethnobotany, reporting on many aspects, with suggestions for the wandering reader. (Available from WER or for \$7 postpaid from Lux Natura, 2140 Shattuck Ave. #2196, Berkeley CA 94704.)

Roy Tuckman's **Something's Happening Productions** sponsored a successful fundraiser for us in late August, with Terence as the speaker and Eliza Gilkyson as opening musician. We very much appreciate the contributions of time, energy and money. It keeps us going, and growing.

Last January, the German magazine **Esotera** sent journalist Micky Remann to Hawaii to photograph and report on BD's project there. He was accompanied by Sharon Levinson and Renee Zucker, who interviewed Terence on our work. A wonderful article resulted in the September issue, which brought **Esotera** a flood of affirmative mail and caused them to rethink their attitude toward traditional plant medicine and psychoactive plants.

September saw BD's annual directors' meeting, which was successful in several ways. This year we finally enticed Nicole Maxwell to join us from Mississippi, which allowed us her rare company, sound advice, and a chance for me to video-interview her on her life as a roving ethnographer. At 83, Nicole is still working with medicinal plants and looking forward to the republication of her book, **Witch Doctor's Apprentice**, in early 1990. Feedback from all directors was valuable, as always.

Terence and I spent the month of October in England and West Germany, making connections and joining the fray. We visited exotic plants at London's renowned Kew Gardens and at the Palmengar-

ten in Frankfurt. In London we spent time with William Patrick Watson, purveyor of the world's oldest botanical manuscripts and rare books, and also visited with theoretical biologist and BD director Rupert Sheldrake. In Germany, as Terence did a speaking tour, we met many dynamic people and remet many friends, among them the well-known anthropologist and author Christian Ratsch, an expert on Mayan ethnobotany and magical plants worldwide.

The garden site is well cared for, more seeds have just come in from the Amazon, but the Jeep has not yet been replaced. For those many who ask, visiting the Hawaiian site is very difficult to arrange, as it is beyond the reach of both telephone and 2WD vehicles. Alerting our caretaker by mail to a visitor's uncertain vacation schedule and possible visit has proved very unsatisfying to everyone. Basically, BD is not yet well-enough funded, equipped or staffed to be open to the public. When we are, we will let you know. In California, fundraising for our basic operating budget remains a primary activity, along with increased communication with various collectors, researchers, etc. We are making our land payments, grant proposals are circulating, and since **PlantWise** was born, our children have learned the sacred nature of "deadline." I hope you are edified by this issue, and that you enjoy it too. Thanks for your subscription and support.



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## ANCIENT FUND OF KNOWLEDGE

by Richard E. Schultes, Ph.D.

Director, Harvard Botanical Museum  
Advisor, Botanical Dimensions

My own particular interest as an ethnobotanist has dealt with man's dependence upon, utilization and preservation of the plants of his ambient vegetation. Even this interdisciplinary field of ethnobotany has in recent years grown to such an extent that subdivisions have had to emerge: paleoethnobotany or archaeoethnobotany, ethnopharmacology, ethnomycology, and most recently, *ethnobotanical conservation*.

From man's earliest emergence as a thinking animal, he has turned to the Plant Kingdom for his foods, his medicines and most of his other necessities. By the time that the beginnings of civilization appeared, his knowledge of the properties of the plants was well developed. We must not assume that only modern primitive societies have acquired a knowledge of the biodynamic properties of their plants and have bent them to their use. Archaeoethnobotany is constantly producing evidence that very ancient cultures had early acquired an acquaintance with biodynamic plants.



A Neanderthal burial excavated in Iraq, dated approximately 60,000 years ago, disclosed pollen clusters of numerous plants, many of which are medicinal. While there can be no certainty that these people were aware of the economic and medicinal properties of the flowers, it is reasonable to assume that they were well experienced with the ambient vegetation, since their existence depended on it.

The perspicacity with which man in primitive societies takes advantage of his ambient vegetation has long been a source of admiration. Most of his knowledge of plant properties, of course, must be the result of trial and error. Some of his discoveries of plant properties, however, are so complex that it seems almost impossible to explain how they could thus have been accomplished. This complexity is nowhere more obvious than in the many intricate recipes for the preparation of arrow poisons.

The accomplishments of native peoples in understanding plant properties so extensively must be simply a result of a long and intimate association with their floras and their utter dependence on them for living. It behooves us to take advantage now of this extensive but almost latent knowledge that still exists in many parts of the world, lest it be lost with the inexorable rush of civilization and the resulting extinction of one primitive culture after another. This experimentally acquired knowledge may not much longer be available. Hence, the urgency to intensify our efforts in that aspect of ecological studies now known as ethnobotanical conservation must be immediately obvious.

From "Ecology and Ethnopharmacological Conservation," *Social Pharmacology* 1(1), 1987

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"to collect, protect, propagate and understand  
plants of ethnomedical significance  
and their lore."



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